NASA ACAST Workshop 2004

Advancing VHF Systems Efficiencies
Break Out Session

August 24-25, 2004

Chair: Monty Andro/NASA GRC
Co-Chair: Steve Koczo/Rockwell Collins

Agenda

- Breakout session presentations
- Overview of ACAST VHF optimization plan
  - Discussion/Feedback
- Breakout session discussions
  - Discussion questions

Problem Statement

Limited VHF communications system capacity and increasing air traffic results in congestion of the aviation VHF spectrum. The resulting voice communication errors and delayed channel access create system congestion and air traffic delays.

Objective

Identify near term technologies to improve the performance and spectrum efficiency of current and emerging VHF communications systems. Select technologies with the highest potential, perform research and development to bring them to implementation stage.

Approach Overview

VHF Avionics Improvements

Study and select one technology improvement for system analysis, build and test:

- Co-Site interference mitigation
- Re-configurable antenna technologies
- Guard band reduction

Dynamic Frequency Allocation

System study and concept development

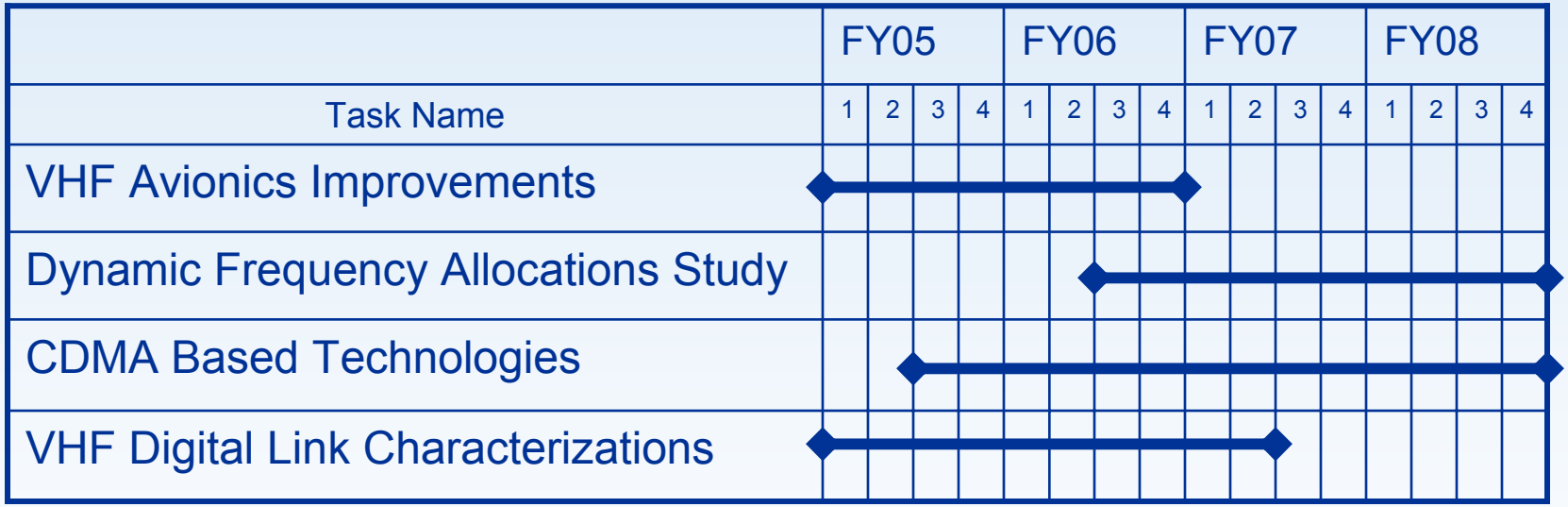
CDMA Technologies

System study and analysis and capacity determination.

VHF Digital Link Characterizations

Characterize VHF Digital link performance (modes 2 and 3) utilizing in-house test hardware emulation test bed.

Schedule


FY05
FY06
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Task Name
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VHF Avionics Improvements
Dynamic Frequency Allocations Study
CDMA Based Technologies
VHF Digital Link Characterizations

Approach Feedback Discussion

- Prioritization of technologies being pursued.
- Additional technology improvements
- External activities or work that should be considered
- Other Feedback, Suggestions

Discussion Topics

- What are key performance parameters for VHF communication systems that require further characterization?
- What are strategies to implementing a CDM-overlay type system, and what are possible barriers?

Additional Discussion Topics

- What are the key technologies to reduce frequency guard band requirements?
- What are the issues that VHF antenna technology can address?
- What are the dynamic geographic frequency allocation issues and barriers?